NOTES ON THE CYTOLOGY AND DISTRIBUTION OF *ANAPALINA*, *TRITONIOPSIS*, AND *SPARAXIS*, CAPE IRIDACEAE[1]

PETER GOLDBLATT[2]

Anapalina and *Tritoniopsis* are two closely related genera of Iridaceae subfamily Ixioideae, both restricted in distribution to the Cape Province of South Africa and both centered in the Cape Floristic Region. *Sparaxis*, also a member of subfamily Ixioideae is only distantly related to these two genera, and its range is restricted to the western Cape and adjacent karoo. Recent collecting expeditions to South Africa have enabled me to extend knowledge of the cytology and distribution of *Tritoniopsis* and of *Sparaxis*, and this new information is presented here.

Chromosome counts were made from root tip mitoses, squashes being prepared by the method outlined in other papers (Goldblatt, 1976; Goldblatt & Gentry, 1979).

TRITONIOPSIS AND *ANAPALINA*

CHROMOSOME CYTOLOGY

1. *Tritoniopsis*.—*Tritoniopsis parviflora* (Jacq.) Lewis $2n = 32$. S. Africa, Cape, near Baardscheerdersbos, Caledon distr., *Goldblatt 5385* (MO).

Tritoniopsis doddii (Lewis) Lewis $2n = 30$. S. Africa, Cape, Vogelgat, lower slopes near Hermanus, *Goldblatt 5387* (MO).

The only previous counts in *Tritoniopsis* are $2n = 32$ for four species, *T. leslei*, *T. lata*, *T. parviflora* and *T. unguicularis* (Goldblatt, 1971). The new count here for *T. parviflora* confirms the earlier report of $2n = 32$, but the count of $2n = 30$ in *T. doddii* is a new number for the genus. The somewhat specialized *T. doddii* may be an aneuploid species. Cytological preparations for this species, which has the small chromosomes characteristic of subfamily Ixioideae, are not perfectly clear, but a pair of large metacentrics are evident, and not seen in the karyotype of *T. parviflora*.

2. *Anapalina*.—*Anapalina caffra* (Ker ex Bak.) Lewis $2n = 32, 32 + 1B$. S. Africa, Cape, southern Cape near Storms R. bridge, *Goldblatt 5214* (MO).

There are only two counts in the chromosome record for *Anapalina*, both $2n = 34$ (Goldblatt, 1971), for *A. nervosa* and *A. triticea*. The present count, $2n = 32$, for *A. caffra*, is thus the first report for the species and a new number for *Anapalina*. While this may represent aneuploidy in the genus, previous counts require confirmation. These were made using section techniques, which are known to yield preparations more difficult to analyze than squash methods employed here.

---

[1] This research was funded by Grant DEB 78-10655 from the U.S. National Science Foundation.

[2] B. A. Krukoff Curator of African Botany, Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166.

ANN. MISSOURI BOT. GARD. 68: 562–564. 1981.

0026-6493/81/0562–0564/$00.45/0

RANGE EXTENSION FOR *TRITONIOPSIS FLEXUOSA* (L.F.) LEWIS

Tritoniopsis flexuosa is a rare, local endemic of the Caledon district, until now believed to be restricted in range to the lower slopes of Shaws Pass, south of Caledon (Lewis, 1952, 1959). It was first collected by Thunberg in 1774, who did not provide a locality for the species, and not again until 1937 when T. M. Salter collected leaves only, on Shaws Pass. G. J. Lewis collected flowering plants the following year, and was then able to relate Thunberg and Linnaeus fil's *Gladiolus flexuosus* to a known South African plant.

The species is very distinctive, both in leaf and flower and thus when I found a small population in leaf, with old, dry, inflorescences on the farm Mierkraal, ca. 12 km S of Bredasdrop, I knew at once that the species was indeed *Tritoniopsis flexuosa* even though the plants were some 60 km SE of the known range of the single population. The plants (*Goldblatt 5609* at MO) have the peculiar single basal leaf, produced before the flowers, with its remarkable filiform pseudopetiole ca. 4 cm long, and lanceolate-ovate lamina, cordate at base with two conspicuous nerves and undulate margins. Other features such as bract and fruit morphology also conform with Lewis' detailed descriptions (Lewis, 1952, 1959).

It seems likely that this rare summer flowering species may occur elsewhere between the two stations now known. Its late summer blooming period may be one reason why it is seldom recorded, for little collecting is normally done at this season, the driest and hottest time of the year in this region of mediterranean climate.

SPARAXIS

Sparaxis is a small genus of six species. It is fairly well known and was revised recently by myself (Goldblatt, 1969). A synopsis of the species and their geography was published in 1979 (Goldblatt, 1979) that essentially summarized the earlier paper.

At that time *Sparaxis pillansii* L. Bolus was believed to be a very narrow endemic of seasonally damp sites near the village of Nieuwoudtville at the northern edge of the Cape Floristic Region. A single record of the species from Driefontein, SW of Calvinia, some 35 mi to the east, *Marloth s.n.* was regarded as doubtful and requiring confirmation (Goldblatt, 1969). In 1980 I discovered a small population of *S. pillansii* in a damp gully on the lower slopes of the Hantamsberg, just north of Calvinia (*Goldblatt 5806*). The population is certainly native there, and the range of *S. pillansii* is thus extended from Nieuwoudtville eastwards some 40 mi. This record suggests that the Marloth gathering from Driefontein, not far distant, is in fact correct. *Sparaxis pillansii* thus appears to be a western karoo species rather than a marginal species of the Cape Floristic region. As far as is known, *S. pillansii* is still most common in the Nieuwoudtville area and although this is its present center today, it may well have evolved in the presently arid western karoo in the past when the climate there was more amenable.

LITERATURE CITED

GOLDBLATT, P. 1969. The genus *Sparaxis*. J. S. African Bot. 35:219–252.

———. 1971. Cytological and morphological studies in the southern African Iridaceae. J. S. African Bot. 37:317–460.

———. 1976. Cytotaxonomic studies in the tribe Quillajeae (Rosaceae). Ann. Missouri Bot. Gard. 62:200–206.
———. 1979. The species of *Sparaxis* and their geography. Veld & Flora 65:7–9.
——— & A. H. GENTRY. 1979. Cytology of Bigoniaceae. Bot. Not. 132:475–482.
LEWIS, G. J. 1952. A note on the rediscovery of Thunberg's *Gladiolus flexuosus* and a complete description of the plant. Ann. S. African Mus. 40:1–5.
———. 1959. The genus *Tritoniopsis*. J. S. African Bot. 25:319–355.